

# MMRA Repeaters

KA1CLX/R	KA1AL/R	KA1CLX/R	N1BHI/R	KA1AL/R	N1DKZ/R	KC1VW/R	N1BHI/R	KA1OUI-3
449.925	224.700	224.400	223.940	146.820	146.715	146.670	146.610	145.030
Marlboro	Weston	Quincy	Hopkinton	Weston	Stoneham	Quincy	Marlboro	Marlboro

## MMRA

### General Membership Meeting

7:00 pm, Monday, November 12, 1990

*The Champion Center (lower level)*

319 Concord Road, Weston, Massachusetts

## Multiband Antennas

*Dr. Chester Smith, K1CCL*

*Mitre Corporation*

Thanks to W1JDO, Chet has agreed to do an encore to his January 1982 presentation to MMRA Members. I understand there was a good turn out for that presentation in spite of a snow storm. See you on November 12th.

7:00 pm - Socializing & Weston repeater tour

7:30 pm - Business Meeting

8:00 pm - **Multiband Antennas, K1CCL**

9:30 pm - 73's

***It is time to renew your membership***

*if you haven't already done so..*

***Membership runs from September 1 to August 31.***

***Autopatch codes will change November 1.***

## Meeting Time & Location:

The *second Monday of odd months* at the **Weston Campion Center**. So the schedule for the year is:

7:00 pm, Monday, September 10

**7:00 pm, Monday, November 12**

7:00 pm, Monday, **January 14, 1991**

7:00 pm, Monday, **March 11, 1991**

7:00 pm, Monday, **May 13, 1991**

**MARK YOUR CALENDARS!**

## 1991 MMRA Flea Market

**9:30 am, Saturday, January 12**

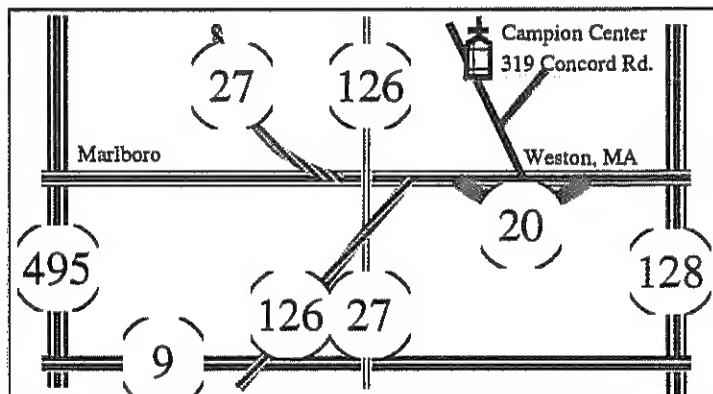
**Westborough Senior High School**

**Route 30 (West Main Street)**

**Westborough, Massachusetts**

Talk In: 146.61, 223.94, and 449.925 MHz.

**Help Needed** - contact N1BHI @ 508-481-3878



A Non-profit Communications Organization Serving the Public in Time of Emergency

***The Minuteman Repeater Association, Inc.***

**P.O. Box 2282, Lexington, Massachusetts 02173**



To:

1505 9109  
Frank P Morrison KB1FZ  
81 Old Garrison Road  
Sudbury, MA 01776

**MMRA Officers:**

President (acting): Andy Morrison, N1BHI 508-481-3878  
 Vice President: - open -  
 Secretary: Frank Morrison, KB1FZ 508-443-6047  
 Clerk: Alfred Williams, KA6BUV  
 Treasurer: Ian MacLennan, AF1R  
 Director (2 years): Alan Kunian, KA1AL 508-429-2906  
 Director (2 years): Walter Ching, N1HBR  
 Director (1 year): Scott Bullock, KA1CLX 508-872-4961  
 Director (1 year): Bill Hawley, KA1RVM  
 Past President: Ralph McNall, WB2DCL 508-366-2404

**MMRA Committees****Nominating**

Chair: Ralph McNall WB2DCL 508-366-2404  
 Member-2: - open -  
 Member 3: - open -

**Newsletter**

Publisher (acting): Ralph McNall WB2DCL 508-366-2404  
 Editor (acting): Alan Medsker WB0SQR 508-478-8721  
 Repeater News: - open -  
 Advertising: - open -  
 Mailing: - open -

**Membership**

Chair (acting): Frank Morrison KB1FZ 508-443-6047  
 Publicity: - open -  
 Member Badges: - open -  
 ARRL Member: Alan Kunian KA1AL 508-429-2906  
 Member Survey: - open -

**Public Service**

Chair (acting): Andy Morrison N1BHI 508-481-3878

**Member Activities**

Chair (acting): Andy Morrison N1BHI 508-481-3878  
 Meeting Prog.: - open -  
 Refreshments: - open -  
 Raffles: - open -  
 - Ticket Sales: - open -  
 Boxboro '92 Chair: - open -  
 Picnic: - open -  
 Xmas Party: - open -  
 Banquet: - open -  
 Fund Raising (act): Ian MacLennan AF1R

**Technical**

Chair: Scott Bullock KA1CLX 508-872-4961  
 Andy Morrison N1BHI 508-481-3878  
 Ralph McNall WB2DCL 508-366-2404  
 Walter Ching N1HBR  
 ?  
 ?

**Bylaws**

Chair: Ralph McNall WB2DCL 508-366-2404  
 Alan Kunian KA1AL 508-429-2906  
 Andy Morrison N1BHI 508-481-3878

**Operating Practices**

Chair (acting): Frank Morrison KB1FZ 508-443-6047

We published this Committees list about two years ago.

The unfortunate aspect of it is that there are as many open positions today as there was then. And board members are acting in many of the positions other members haven't come forward to fill. VOLUNTEER - PLEASE!

**The Minuteman Repeater Association, Inc.**

Box 2282, Lexington, Massachusetts 02173

Location	MHz (In/Out)	Call	Trustee	Phone	Patch	Net-Link	Pout
Hopkinton	222.340/223.940	N1BHI/R	Andrew Morrison	508-481-3878	No	Default On	
Marlboro	146.010/146.610	N1BHI/R	Andrew Morrison	508-481-3878	BaySt.	Default On	
Marlboro	444.925/449.925	KA1CLX/R	Scott Bullock	508-872-4961	No	Hub	
- West	145.030 -Net/ROM	KA1OUI-3	Gerald McGarry	508-	NA	---	
Quincy	222.800/224.400	KA1CLX/R	Scott Bullock	508-872-4961	Local	Planned-On	
	146.070/146.670	KC1VW/R	Roy Maglin	617-328-5718	Local	Planned-Off	
Stoneham	146.115/146.715	N1DKZ/R	Mike Goldberg	617-662-9713	Local	Planned-Off	25 W
Weston	146.220/146.820	KA1AL/R	Al Kunian	508-872-2912	BaySt.	Planned-Off	
	223.100/224.700	KA1AL/R	Al Kunian	508-872-2912	No	Planned-On	

## The President N1BHI

See "Linking MMRA Repeaters" under *Repeater News* for the President's column this month.

## Editorial - WB0SQR

I'm excited by the news in this issue of the Minuteman, regarding the continuing development of our network of repeaters! Certainly those of us that don't have a chance to "get our hands dirty" actually working on these machines appreciate those that have dedicated long hours out of their personal schedules to provide us with quality repeaters and good functionality. On behalf of the MMRA membership, Thanks to Scott and his gang!

One question that still needs to be answered is what are we going to do with all of this? That's something for the club membership to decide upon, but I'd like to express some views here on this subject. I for one, think that having the technology and expertise, both of design and of use of our repeaters and their new capabilities gives us new responsibilities. Certainly part of this new responsibility includes using extra care when using our machines - our *on-the-air etiquette* (or lack thereof!) will provide a view of the MMRA membership to a much wider audience. Primarily, though, I'm talking about *public service*.

New opportunities will present themselves for serving our communities, our Commonwealth and our country as a result of the technology now (and soon to be) at our command. Let's make a point to pursue these opportunities both as individual hams and as an organization, and work to provide the kind of service that the public has come to expect from the amateur radio community, and even to exceed those expectations! None of us is where we are because we got there all by ourselves. We had help. Let's work to pay off a little of that debt!

73, Alan Medsker, WB0SQR  
60 Pine Street,  
Milford, MA 01757

## The Publisher WB2DCL

While I am no longer President, I am continuing to fill the need for a Publisher. If you would like to help out or have the time and production capability to seriously consider taking over as publisher, please contact me. Meanwhile I will continue to strive to get The Minuteman Newsletter to you on a timely basis.

73, Ralph McNall, WB2DCL  
508-366-2404  
508-467-3918 (work days)

## Meeting Reports

### Minutes of the Monday, 10 September 1990 General Meeting

#### 1. New Acting President -

Vice President Andrew Morrison (N1BHI) has assumed the duties of acting President of the Association until the next regular election following the resignation of Ralph McNall (WB2DCL) owing to family commitments. Ralph will exercise his prerogative as outgoing President for a seat on the Board of Directors for one year. The position of Vice President will be unfilled until the next election unless a volunteer can be found. Candidates for this position should contact one of the Association officers or directors, and the appropriate steps according to the bylaws will be taken to fill the Vice Presidency.

#### 2. Trustee Changes -

Roy Maglin (KC1VW) has volunteered to assume the Trusteeship for the Quincy 146.67 repeater.  
Scott Bullock (KA1CLX) has taken over as Trustee of 224.40 in Quincy.

#### 3. Life Memberships -

The following honorary Life Memberships in the Association, recently approved by the Board, were announced: Bob Clements (K1BC) and Frank Hilbrunner (W1JDO).

#### 4. General Meetings -

As a result of the member survey, General Membership Meetings will be held on the second Mondays of odd months during Fall, 1990 through Spring, 1991.

These meetings will continue to be held at the Campion Center, Weston.

#### 5. Flea Market -

The annual Flea Market will be held at Westboro High School on Saturday, January 12, 1991. This year, the Flea Market will be better organized and advertised. QST will be given directions early, in order to avoid recurrence of last year's mix-up over the site. The setup will be done on Friday evening. There will be a raffle to help hold buyers at the Flea Market a little longer, which should help improve profits.

#### Ten volunteers minimum are

**needed** for the Flea Market, for such duties as setup, door security, concession work, and cleanup. Please contact Andy Morrison if you would like to help.

#### 6. Membership Stable -

Frank Morrison (KB1FZ) reported that the number of members of the Association has stayed relatively constant over the past 3-4 years, despite 60 - 80 people who do not renew each year. Dues for the new membership year are currently payable, and about 20% of the membership have already renewed. Autopatch codes will change on November 1, so send in your renewal soon if you haven't already done so.

Ralph McNall reiterated the "QST" statistics that the highest growth in Amateur Radio is in the 40-60 age group, while only 2% of the total grown is in the under 18 group, and urged members to try to involve younger people.

#### 7. Forthcoming events:

other clubs *Novice classes:*

a. Framingham Amateur Radio Association (in progress); code practice for 13 WPM and Advanced theory will be forthcoming.

b. American Red Cross Amateur Radio Club (soon)

c. Wellesley Amateur Radio Club (starts 24 Sept.)

Contact these clubs for further details.

#### 8. Articles of Incorporation Changes -

It was moved and seconded that the changes to the *Articles of Incorporation* pending since last fall be accepted.

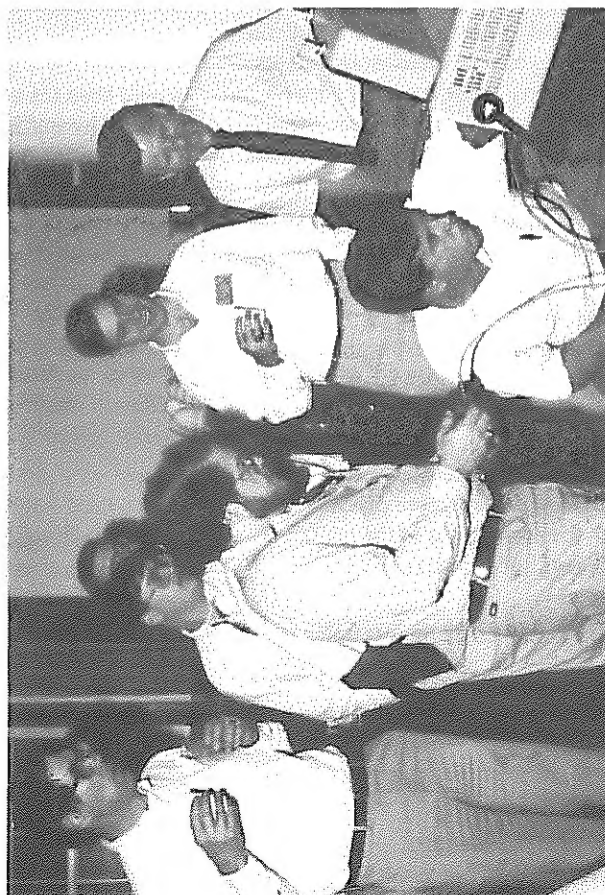
*Continued on page 6*

Table 1 Membership Roster - 1990 Oct. 15

Call	Name	QTH	State	Call	Name	QTH	State
NF1A	Arthur E. Pizer	Billerica	MA	N1FKC	Francis J. Power	W. Roxbury	MA
WB1AAT	Michael Ryan	Chelmsford	MA	W1FOF	L Eloise McLean	Framingham	MA
W1ACB	Charles F Anderson	Quincy	MA	WA1FPA	Warren Legee	Holliston	MA
N1AJK	Edward D Ostroff	Sudbury	MA	N1FPW	Wayne A Simpson	Millis	MA
KA1AKD	Albert G Faul Jr	Concord	MA	K1FQL	Martin Blustine	Waltham	MA
KA1AL	Alan E Kunian	Holliston	MA	N1FWI	Frank J. Caci	Winchester	MA
WB1ANP	William Needham	Braintree	MA	N1FWJ	Sue Caci	Winchester	MA
WB1APS	Kenneth Taylor	Medford	MA	N1FWV	Jeffrey Arnold	Revere	MA
KA1AS	Albert S Bolduc	Reading	MA	N1FXM	Angelo DeGiovanni	Lynnfield	MA
W1ASI	Joseph A Mullen	Hyde Park	MA	N1FYX	Donald R. Boland 1st	Malden	MA
K1AUQ	Russell W. Dearborn	Bellingham	MA	KB1FZ	Frank P Morrison	Sudbury	MA
K1BAF	Aaron Fishman	Ashland	MA	WA1GAN	David R. Pierce	Halifax	MA
K1BC	Robert C Clements	Lexington	MA	N1GET	Marcial Bones, Jr.	North Reading	MA
N1BDA	Steven W Telsey	Concord	MA	N1GGJ	Dianne Clayton	Stow	MA
WA1BGP	John K Ross	Needham	MA	K1GHT	James M. Jacobs	Chestnut Hill	MA
N1BHA	Dorothy Hiltbrunner	Westwood	MA	N1GIQ	Frederick W. Holmes	Chelmsford	MA
N1BHI	Andrew L Morrison	Marlboro	MA	N1GKD	James Worrell	Dorchester	MA
N1BHU	David Schwartzberg	Boston	MA	WB1GMA	Thomas L. Qualtieri	Westwood	MA
W1BJS	Elmer M Goldman	Framingham	MA	N1GMS	Steven Paul Grondin	Burlington	MA
N1BRM	Robert B Gettys III	Framingham	MA	N1GTB	Elaine R. Chase	Natick	MA
K1BTF	Earle B Foote	Framingham	MA	W1GWN	Warren M. Zapol	Concord	MA
WB1BUZ	Joseph M Garfield	Sherborn	MA	N1GWY	William T. Drago	Maynard	MA
WB1BVA	Frances B Garfield	Sherborn	MA	N1GZQ	Grace Maglin	Quincy	MA
N1BZT	Victoria C Duffy	Tunbridge	VT	KA1HAI	Santo J Gozzo	Braintree	MA
K1CCL	Chester L Smith	Bedford	MA	WA1HAI	Joseph W. Weisse	Natick	MA
WA1CFX	Howard L Mintz	Jamaica Plain	MA	N1HBR	Walter S. Ching	Marlboro	MA
K1CG	George Manning	Pembroke	MA	N1HBX	Rob Schwartzberg	Boston	MA
K1CHY	Irwin C. Stone	Westwood	MA	N1HDR	Anthony S. Knight	Lynn	MA
KA1CLX	Scott R Bullock	Framingham	MA	N1HDU	Edward Keeley	Medford	MA
WA1CMH	Murad Mooradian	Marlboro	MA	W1HIT	Arthur A Davis	Cambridge	MA
N1CPV	Allen A Cramer	Shrewsbury	MA	KB1HO	Ruff Read III	Hopkinton	MA
N1CQU	Susan M Gillespie	Wakefield	MA	N1HPM	John R. Campton	Charlestown	MA
N1CSO	Edward J Gillespie	Wakefield	MA	N1HQB	Drew Harvey	Hudson	MA
N1CTY	Robert H. Flumere	Ashland	MA	N1HUF	Barry M. Glassman	Norwood	MA
N1CW	Ray Shoop	Marlboro	MA	N1HYX	Donald J O'Shea	Waltham	MA
AG1D	Dale A Zeskind	Wayland	MA	N1HZI	Deborah Burns	Westford	MA
WA1DCL	Bruce Stacey	North Billerica	MA	N1HZJ	Bruce Burns	Westford	MA
W1DDO	Robert Rupienas	Dorchester	MA	KZ1I	David Metz	Gilford	NH
N1DDU	Jim Waish	Jamaica Plain	MA	WA1I	Jeffrey H. Moskow	Groton	MA
N1DEA	James R Henderson	Lincoln	MA	K1IAO	Hazen J Saltmarsh	Westwood	MA
N1DEV	Harrison G Ball	Sudbury	MA	N1IBB	Matthew Chao	Newton	MA
N1DGC	Gerald E. Ash	Maynard	MA	W1IBF	Robert G Ling	Sudbury	MA
N1DIZ	Dennis Ditto	Dover	MA	W1IBV	Allan B MacQuarrie	Needham	MA
N1DQF	Joseph M. Grifoni	Winchester	MA	WA1IDA	S Robert Salow	Newton Highlands	MA
W1DWI	Francis X Molloy	Quincy	MA	K1IJZ	William R Wade	Waltham	MA
N1EAV	George A. Affannato	Acton	MA	KA1INO	Richard C Simonson	West Roxbury	MA
KB1EB	John H Antes	Wayland	MA	KA1IYR	Kathleen E. Pate	Dover	MA
KA1EEC	Eric S Johansson	Billerica	MA	KA1IYV	Joseph A Cibotti	Holliston	MA
WB1EFN	Allan B Corderman	Concord	MA	KA1IYY	Mary Jane Simpson	Millis	MA
N1ELC	George Stringos	West Woburn	MA	W1JBY	Bernard V Matarazzo	Quincy	MA
KA1EMI	Margaret Gildea	Arlington	MA	W1JCI	Waldo H Clark	Waltham	MA
N1ENW	Joseph M. Grifoni	Winchester	MA	W1JDO	A Francis Hiltbrunner	Westwood	MA
N1ERE	Joel Cazewatsky	Newton	MA	K1JIY	Joel Tenenbaum	Brockton	MA
W1ERJ	Jerome L Hartke	Sudbury	MA	K1JLK	Henry Corcoran	Mendon	MA
WB1EUA	William T Ryan	Franklin	MA	WA1JNJ	Robert Bosworth	Framingham	MA
N1FDS	Joseph A. Bellitti	Medford	MA	KA1KCU	Ronald E Feder	Sudbury	MA
WA1FEU	Peter Buttner	W. Brattleboro	VT	W1KSK	Robert L Ungvary	Framingham	MA
KC1FH	Gary Buchwald	Brookline	MA	KZ1L	Andrew S Morrison	Pepperell	MA
				KC1LC	Ernest W Horne	Sharon	MA



Call	Name	QTH	State	Call	Name	QTH	State
WA1LKF	Stephen Moro	Framingham	MA	WA1WDQ	Donald F Mofford	Randolph	MA
KB1LY	Joseph R Smulowicz	Lincoln	MA	K1WFZ	John E Tremblay	Burlington	MA
KK1M	Kenneth P Kibilda	Upton	MA	WA1WIS	Jay I W Moskow	Newton Centre	MA
WA1MDO	Tom Porada	Westboro	MA	N1WJC	Thomas B. Crowley	Lynn	MA
KC1MG	Earl Nangle	Waltham	MA	W1WME	Ralph D Stetson	Concord	MA
K1MOQ	Frank H Duffy	Tunbridge	VT	W1WSN	Stephen G. Rudin	Stoughton	MA
WA1MXO	James N. O'Boyle, Jr.	Arlington	MA	WA1WUU	Daniel O Gentile	Westwood	MA
K1NDF	Neal Lipson	West Newton	MA	WA1WZJ	Richard A. Maguire	Lexington	MA
N1NJW	Claire Brozenske	Sudbury	MA	KT1X	David H. Croll	Sudbury	MA
KN1O	Alan Amos	Stow	MA	WB1Y	Nobuyuki Fujita	Hudson	MA
WA1OQK	Jack Clayton Jr	Stow	MA	W1YPC	Gerald M MacNabb	Hopkinton	MA
K1OQX	Perry R Lipson	West Newton	MA	W1YPF	Paul J Wolf	Westboro	MA
KA1OUI	Gerald J. McGarry	Marlboro	MA	K1YSO	James Gessner	Jamaica Plain	MA
AF1P	Edward C. Pavone	Belmont	MA	W1YTK	Paul Simmons	Cambridge	MA
KA1PAX	Howard A. Katz	South Easton	MA	W1ZFI	Robert A J Gildea	Arlington	MA
K1PBL	Robert M Fraser	Lincoln Center	MA	WA1ZRQ	Joseph A Pinto	Quincy	MA
K1PDX	Saul B. Dinman	Littleton	MA	W1ZSH	William E. Blanchard	Franklin	MA
K1PFT	H Reid Ward	Abington	MA	WA1ZWO	Harold M. Krauthamer	Hyde Park	MA
K1PKX	Robert D. Shediach	Stoneham	MA	WB2DCL	Ralph McNall	Westboro	MA
W1PRI	Robert A Waters	Weston	MA	WA2MVP	Harvey Kram	Floral Park	NY
WA1PZK	Helmut H. Pichler	Winchester	MA	WB3AHW	Vernon Lee Eshbaugh	Chelmsford	MA
W1QEC	William G Hooper Jr	Wilmington	MA	K3BUZ	Barrie Brozenske	Sudbury	MA
W1QGL	William R Weiss Jr	Lexington	MA	WB5TVA	William Metzger	Westboro	MA
KA1QNR	George E. Battit	Belmont	MA	KA6BUV	Alfred E. Williams	Concord	MA
WA1QXI	Carol A Clayton	Stow	MA	KA6CPJ	James Congdon	Sudbury	MA
AF1R	Ian MacLennan	Needham Heights					
K1RLY	Robert F White	Hopkinton	MA				
KA1RVO	Carol Brozenske	Sudbury	MA				
W1RYE	William P Sullivan	Canton	MA				
KA1RZS	Won H. Bae	Marlboro	MA				
K1TS	John Rhoads	Hamilton	MA				
KA1SBG	Christopher Hubbard	Watertown	CT				
W1SCS	Ruthe Ferguson	Amherst	MA				
N1SE	Roland L Erikson	Northboro	MA				
WA1SEW	Duane W. Hurlburt	Billerica	MA				
WA1SMI	Robert S Isaacs	Ayer	MA				
WA1SNH	Peter T Baldwin	Rowley	MA				
KA1SZV	Kit Gildea	Arlington	MA				
KA1TAR	Brian G. Goodwin	Everett	MA				
K1TCV	Roger N Tessier	Marlboro	MA				
KA1TKZ	Kendell C. Uloth	Stoneham	MA				
W1TMO	David Crocker	Needham	MA				
KA1TOR	Michele H. Mooradian	Marlboro	MA				
K1TTY	James P. McCaffrey S.J.	Weston	MA				
KA1TUZ	Richard C. Doherty	Newton Center	MA				
NN1U	A. Paolantonio	North Scituate	RI				
KA1UFE	Paul R. Caggiano	North Reading	MA				
KA1UGM	John F. Jacobs III	Amherst	MA				
K1UKM	Irving C. Davis	Franklin	MA				
K1UPY	Philip Henneberry	Dedham	MA				
KA1USL	Lee J. Gartenberg	Framingham	MA				
KA1UUD	Sharon M. Gartenberg	Framingham	MA				
K1UVD	Joe Aversa	West Roxbury	MA				
WA1UVR	John Morrison	Cambridge	MA				
KC1VS	Lawrence E. Ober	Framingham	MA				
KC1VW	Roy Maglin	Quincy	MA				
K1VZI	Lee Richard Herterich	Wellesley	MA				
AJ1W	Julius Jerry Rosen	Millis	MA				
KZ1W	Grant Saviers	Sudbury	MA				
KA1WCR	Matthew Brozenske	Sudbury	MA				



Continued from page 3 - Articles of Incorporation

Discussion: these alterations are required to assure the most favorable non-profit status for the Association according to Federal and State regulations. Briefly, they make explicit that the Association is nonsectarian, non-discriminatory, oriented toward public service, and not operated for profit. Motion carried unanimously.

#### 9. Annual Budget -

Budget for the Fall 1990 - Summer 1991 operating year was presented. The following suggestions for budget improvements were made:

- a. Cease distributing membership cards, indicating membership expiration month on labels affixed to *The Minuteman* newsletter.

*Discussion:* Although this measure would save postage, the membership cards provide a means for distribution of autopatch codes, and can be used as proof of membership for members-only votes and meetings. Barrie Brozenske (K3BUZ) recommended affixing a label to one issue of the Bulletin indicating official membership status and printing the new patch codes on the opposite side of that sheet, providing a "cut-out" membership card that would replace the current one. This suggestion was referred to the Board of Directors for final disposition.

- b. Use bulk mailing rates for *The Minuteman* newsletter.

*Discussion:* Although this measure would also provide some savings, the Postal Service does not guarantee delivery of this category of mail at all, and delays of three weeks are typical. In light of past member dissatisfaction with the promptness of the Bulletin, bulk mailing appears to be a false economy.

Summary of selected budget items by site:

- a. *Marlboro West:* SCom 7K controller (the existing 5K will go to Quincy.)
- b. *Marlboro East:* Fixed expenses, plus new hybrid patch, amplifier tubes, etc.
- c. *Quincy:* Possible link repeater / transmitter. New 220 antenna [unbudgeted].
- d. *Stoneham:* New duplexor or plating

needed [unbudgeted.] Also, Stoneham was budgeted for a 5K controller, whereas a 7K is required to meet its needs.

- e. *Weston:* Power supplies; boards for Arlington link.

- f. *Hopkinton:* New antenna (carried over from last year); possible new receiver.

Budget carried by unanimous vote of the members present.

#### 10. Networking -

Andy Morrison (N1BHI) presented the proposed architecture for the new MMRA network [which would utilize remote base linking], incorporating all its repeaters. Briefly, the hub of the network would be the 449.925 MHz Marlboro machine, which would have continuously available links to the three 220 repeaters. These links could be dropped at will using DTMF for more localized chatter, but would be re-established automatically after activity ceased. Users of the 2-meter repeaters, in contrast, would in general activate links into the network using DTMF tones, and the links would be dropped automatically after activity ceased. This would keep the network from being clogged by traffic from the 2m machines, by far the most active, while encouraging participation by Novices using their normal 220 privileges. The network could be reconfigured to deactivate or activate links on a more extended basis via codes issued to control operators in order to handle local emergencies or other localized communication needs. Different confirmation tones will be used to uniquely identify the repeaters in the link for a given QSO.

This is a brief summary only.

Comments are welcome, and should be passed to Board members.

Respectfully submitted,

Al Williams (KA6BUI)  
Clerk

**Board meeting - 90/10/10**

**Technical Committee meeting**

**Minutes of CEMARC Meeting**

**NE Spectrum Management**

## Donations

We would like to thank Dave Metz, KZ1L, for his continuing support of the MMRA through his donation of the 2 meter mag-mounts we raffle off at our meetings. Thanks Dave!

## Repeater News

### Linking MMRA Repeaters by Andy Morrison, N1BHI

Back in the late 70's, George Downs, W1CT, developed a plan to link all the MMRA repeaters together. At the time there were only the four 2 meter machines. Because link equipment was scarce and expensive the project never really got off the ground.... But now we are beginning to realize George's goal.

Because there is so much UHF commercial gear on the used market now, we can easily procure at low cost the radios to link all eight of our repeaters together. Before we take a look at how it will work, a few words on the philosophy behind the linking plans are in order.

Pretty soon a whole new group of amateurs are going to appear on the spectra above 220 MHz. The new licensees will come from the no-code initiative that has been taken by the FCC; it's hard to say how many of them there will be. The one thing that the general amateur community must do to insure that the amateur service benefits from the growth in numbers is to make these new amateurs welcome.

The MMRA has a long tradition of public service to the community; anything that we can do to encourage new hams to join with us helps us continue that tradition. By creating a network of one 440, one 2 meter, and three 220 repeaters, we give new hams access to the general ham community. They will learn from us what it means to be a ham, and many of them will join the ranks of the MMRA.

The network will consist of five repeaters that simulcast. The Marlboro 440 and 2 meter machines, KA1CLX/R and N1BHI/R will be linked with our three 220 repeaters - Weston, Hopkinton and Quincy. An amateur using any of these machines will be able to isolate it from the network with TouchTone® codes.

On the input frequency of the repeater to be isolated, simply enter the *last 3 digits of the frequency* plus a **zero to disable**, or a **one to enable** the link (and possibly a \* for certain controllers). Should one of the links have been disabled and not re-enabled, it will return automatically about two minutes after the last activity on the repeater.

For example, on the Hopkinton 223.94 machine, enter 3940\* on your 220 radio tone pad and the link comes down. To bring the link back, enter 3941\* and the link will return. If you don't bring it back, 2 minutes after the last time the repeater receiver was active, the controller restores the link and plays the morse code message: N1BHI/R LINK ON. This works as of now....if you have 220 capability, go on the repeater and give it a try.

Control operators will have a separate set of codes that can disable the link permanently for those repeaters that are always part of the network.

The 2 meter machines in Stoneham, Weston and Quincy will remain separate, but an amateur can bring the repeater he or she is using into the network. He will do this by entering the *last 3 digits of the repeater's frequency* and a **one to join the network** or a **zero to leave the network**. Should the repeater be left on the net, it will leave the net automatically after about 2 minutes. A control operator will have a means to put the repeater on the net until he takes it out of the net.

The flexibility we will have leads to all kinds of possibilities for things like public service events. Any two repeaters can be isolated along with the 449.925 repeater to be used in a public service job or an emergency. Availability of 220 allows the new members of the ham community who have access to only 220 and above to participate with the rest of the club on what might have been a 2 meter only operation before the network became available.

This method of linking the repeaters together is called *remote basing*. It is a simple approach; each repeater that is to be part of the network has a 440 radio interfaced to control inputs and outputs along with transmit and receive audio. That 440 radio transmits on 444.925 and receives on 449.925 - the frequency pair used by the Marlboro 440 machine.

When you transmit on the input to 223.94, the 440 radio goes into transmit, rebroadcasting your audio. The 440 machine acts just as if someone were using it directly, repeating on 449.925 whatever it hears on 444.925. At 146.61, the 440 radio hears a signal on 449.925, and tells the '61 repeater to transmit, feeding the audio coming from 449.925 to '61, which in essence is now repeating whatever is coming into 223.94.

In this technique, **449.925 is the central Node of our network**. The height of the Sligo Hill site is sufficient so that any of our repeaters can remote base to it easily. In addition, there will be a "frequency agile" remote base link at 925. This will allow us to link our network with other networks or single repeaters on 440 -

In a real emergency or during certain exercises, we could link up with World Net, a network of about ten 440 and 220 repeaters that covers eastern and western New England like a blanket. Roger Perkins, W1OJ is the Manager of World Net. You may remember a couple of occasions when he has come and talked at our meetings.

It is important for everyone to know that **Scott Bullock, KA1CLX**, is the key player in all these plans; we are lucky that he has devoted his technical expertise, access to equipment and, most importantly, willingness to spend a lot of time to make all this happen. He deserves a lot of credit and our support as Technical Director for the MMRA.

A few quick notes on using the simulcast network:

1. Don't disable a link just to have a QSO with someone unless the system is in use by others NOT using the same repeater you want to disable.
2. Avoid disabling links during commute times.
3. When you are in QSO, pause a little longer than normal to allow each repeater's courtesy beep to complete so breaking stations can get in from another repeater.
4. When you drop your carrier, you will hear the courtesy tone of your repeater, then that of 449.925. 925's beep is always the last one; that is why we made it distinctive.
5. When someone on a linked repeater

drops his carrier, you will hear a short tone from that repeater's link radio, then the beep from 925. We plan to make each link beep sound different so that eventually we will be able to distinguish which repeater the last signal came from.

6. You will hear two IDs playing on any linked repeater, its own and that of 925, the central node.

These guidelines may change or expand as we gain experience as a group in using a network; our goal will be to keep it simple and leave everything else up to common sense and courtesy.

One of the first questions we hear when describing the plans for the net is When? We have procured all the link radios; we got them at Deerfield for a very good price. All that needs doing is to engineer each site link system (while we are making them all basically the same, there are some differences), procure the Hamtronics kits for COR and DTMF control and then build it all.

We will be looking for some help; that will be coordinated by the trustees of the repeaters to be linked. Anyone who would like to help by building some kits contact me, Scott or the trustee of the repeater you use. We hope that all this will make the MMRA a unique organization, well equipped to support the needs of its repeater users and the communities we live in. Our ultimate goal is a simple one: **We want to be the best Ham Radio club possible.**

## Nets & Public Service

### Civil Defense Area 3

Date/Time: 7:00pm, 1st Monday of month  
Location: 146.01 / 61 MHz - Marlboro  
& @ 7:15 pm on 52./ 53.31 MHz

### Acton Considering Antenna Restrictions

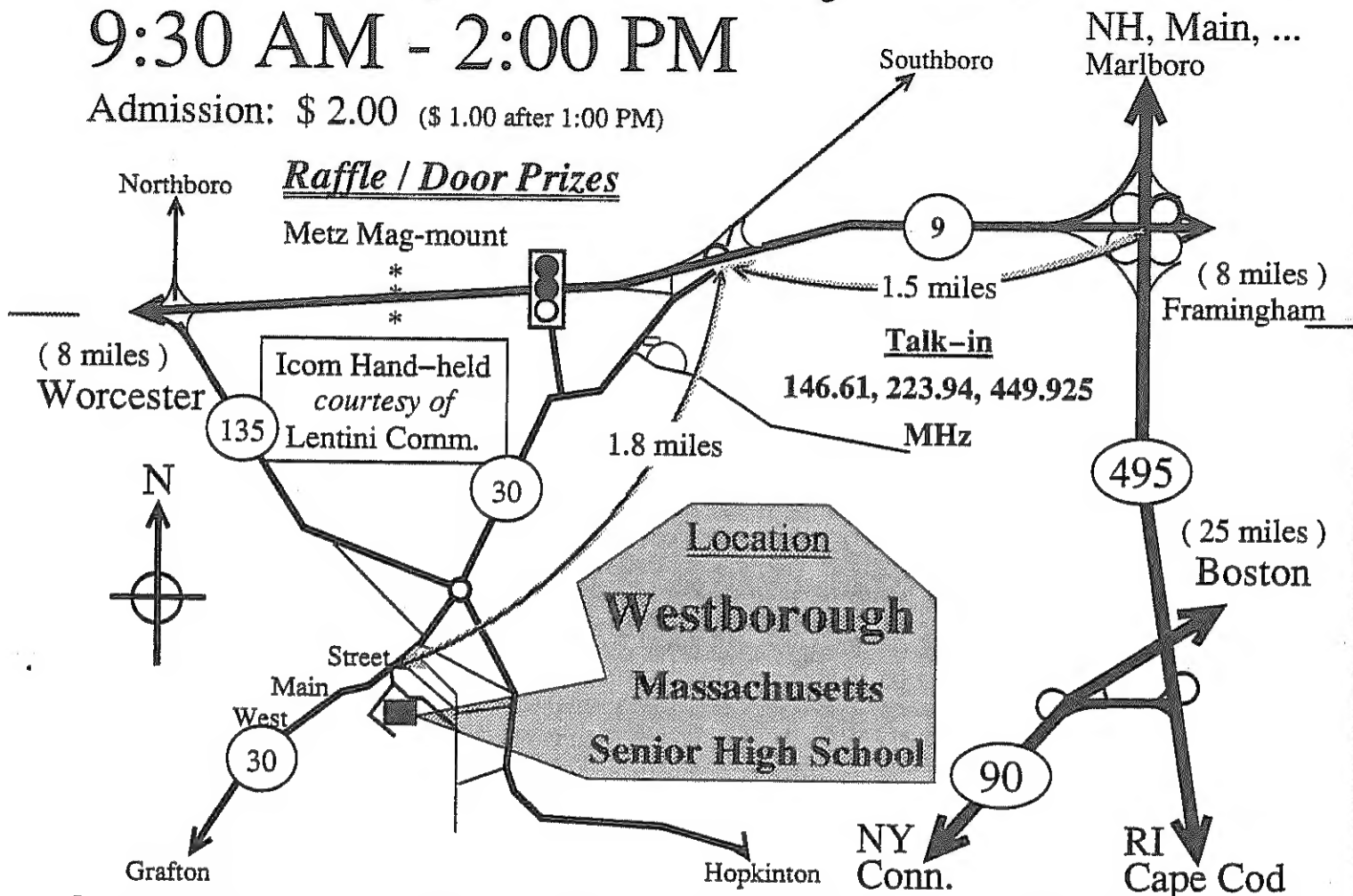
The Town of Acton is considering a proposal to identify three areas of the town as "historic districts". If approved, these districts will be under ordinances to maintain homes and property according to specific standards, guidelines, etc. As such, the town is considering antenna restrictions for these areas.

# MMRA Flea Market MMRA

## Saturday, January 12, 1991

### 9:30 AM - 2:00 PM

Admission: \$ 2.00 (\$ 1.00 after 1:00 PM)



Requests & Information: Andy Morrison, N1BHI, 508-481-3878 or Ralph McNall, WB2DCL, 508-366-2404

**Vendor space request:** 1991 MMRA Flea Market *Dealers Welcome @ 8:00 AM*

Name: \_\_\_\_\_ Call: \_\_\_\_\_

Address: \_\_\_\_\_

Phone-day: (\_\_\_\_) \_\_\_\_\_, night: (\_\_\_\_) \_\_\_\_\_, weekend: (\_\_\_\_) \_\_\_\_\_

Option	Advance / At Door	Width (# 6 ft. increments)	\$ Total
1. Floor space only:	\$ 5.00 / \$ 10.00	x _____ =	\$ _____
2. F/s + Table & Chair:	\$ 10.00 / \$ 15.00	x _____ =	\$ _____
Total: _____ =			\$ _____

( ) Do / ( ) DoNot need access to 120V power (limited availability on a first request basis).

by **January 1, 1991** - send check made out to:

The Minuteman Repeater Association, Inc., P.O. Box 2282, Lexington, Massachusetts 02173

A Non-profit Communications Organization Serving the Public

Marlboro	Weston	Quincy	Hopkinton	Weston	Stoneham	Quincy	Marlboro	Marlboro
449.925	224.700	224.400	223.940	146.820	146.715	146.670	146.610	145.030